Southern Nuclear

Jamie M. Coleman
Regulatory Affairs Director
Vogtle 3 & 4

7825 River Road
Waynesboro, GA 30830
706-848-6926 tel

May 9, 2023

Docket No.: 52-026

ND-23-0335
10 CFR 52.99(c)(1)

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555-0001

Southern Nuclear Operating Company
Vogtle Electric Generating Plant Unit 4
ITAAC Closure Notification on Completion of ITAAC 2.1.02.11b.i [Index Number 48]

In accordance with 10 CFR 52.99(c)(1), the purpose of this letter is to notify the Nuclear Regulatory Commission (NRC) of the completion of Vogtle Electric Generating Plant (VEGP) Unit 4 Inspections, Tests, Analyses, and Acceptance Criteria (ITAAC) Item 2.1.02.11b.i [Index Number 48] for verification that the valves identified in Vogtle Electric Generating Plant Combined License Appendix C Table 2.1.2-1 as having protection and safety monitoring system (PMS) control perform an active safety function after receiving a signal from the PMS. The closure process for this ITAAC is based on the guidance described in NEI 08-01, “Industry Guideline for the ITAAC Closure Process under 10 CFR Part 52,” which was endorsed by the NRC in Regulatory Guide 1.215.

This letter contains no new NRC regulatory commitments. Southern Nuclear Operating Company (SNC) requests NRC staff confirmation of this determination and publication of the required notice in the Federal Register per 10 CFR 52.99.

If there are any questions, please contact Kelli Roberts at 706-848-6991.

Respectfully submitted,

Jamie Coleman

Jamie M. Coleman
Regulatory Affairs Director Vogtle 3 & 4

Enclosure: Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.1.02.11b.i [Index Number 48]

JMC/PCM/sfr

cc: Regional Administrator, Region ll
Director, Office of Nuclear Reactor Regulation (NRR)
Director, Vogtle Project Office NRR
Senior Resident Inspector – Vogtle 3 & 4

Southern Nuclear Operating Company
ND-23-0335
Enclosure

Vogtle Electric Generating Plant (VEGP) Unit 4
Completion of ITAAC 2.1.02.11b.i [Index Number 48]

ITAAC Statement

Design Commitment

11.b) The valves identified in Table 2.1.2-1 as having PMS control perform an active safety function after receiving a signal from the PMS.

Inspections/Tests/Analyses

i) Testing will be performed on the squib valves identified in Table 2.1.2-1 using real or simulated signals into the PMS without stroking the valve.

Acceptance Criteria

i) The squib valves receive a signal at the valve electrical leads that is capable of actuating the squib valve.

ITAAC Determination Basis

Multiple ITAAC were performed to verify that the valves identified in Combined License (COL) Appendix C Table 2.1.2-1 (Attachment A) as having Protection and Safety Monitoring System (PMS) control perform an active safety function after receiving a signal from PMS. The subject ITAAC performed testing on the squib valves listed in Attachment A.

Testing was performed in accordance with preoperational tests and component work orders listed in Reference 1 to verify that the valves identified in Attachment A as having PMS control perform an active safety function after receiving a signal from PMS. Testing was performed on the squib valves identified using real and simulated signals into the PMS without stroking the valve and ensured the squib valves receive a signal at the valve electrical leads that is capable of actuating the squib valve.

Squib valve actuation signals generated in the PMS were sent to the Component Interface Modules (CIMs), resulting in an actuation of the CIM for the respective squib valve. The CIM is a safety-related component located inside the respective PMS cabinets which provides the capability for on/off control of individual safety-related plant components. Squib valve actuation signals output from the actuated CIM are sent to the respective squib valve through the squib valve controller. To provide overlap, the Reference 1 component test work orders verified that when PMS controls were operated in the Main Control Room (MCR), the CIM was actuated and a signal was received at the squib valve controller. From the squib valve controller, the Reference 1 preoperational tests used a test tool connected to the squib valve controller to initiate a test signal and verify the signal was received at the squib valve electrical leads.

The Reference 1 component test work orders for each squib valve identified in Attachment A were conducted by manually initiating a PMS signal from the MCR using the PMS Safety Display Panel Automatic Depressurization System (ADS) stage 4 squib valve soft controls. The squib valve actuation signal from the CIM was verified locally by measuring the arming and firing voltages at the Squib Valve Controller (SVC) cabinet. Each squib valve identified in Attachment A had the electrical leads disconnected to prevent stroking the valve.

The Reference 1 preoperational tests for each squib valve identified in Attachment A were conducted by connecting a PMS SVC Test tool to the SVC. Circuit resistance was measured and inside and outside containment temperatures were measured at multiple locations and were used to calculate the circuit resistance expected during accident conditions. The calculated circuit resistances were verified to meet the minimum and maximum allowable resistances. The circuit resistance information was used to determine the circuit resistance input to the PMS SVC Test Tool. A multimeter along with a temporary data acquisition system was connected to the PMS SVC Test Tool to determine voltage and signal duration. The PMS SVC Test Tool was then used to initiate an arm and test fire sequence. Firing current was determined from the voltage measurements taken during the arm and test fire sequence.

The minimum signal necessary to actuate the squib valves is specified in valve design information as at least 3.7 amperes for 10 milliseconds. The information recorded during testing of duration and voltage was utilized to confirm that a sufficient test signal was received at each of the squib valves.

The test results identified in Reference 1 confirmed that each squib valve, identified in Attachment A, receives an electrical signal at the valve electrical leads that is capable of actuating the squib valve after a signal is input to the PMS.

Reference 1 is available for NRC inspection as part of the Unit 4 ITAAC 2.1.02.11b.i Completion Package (Reference 2).

ITAAC Finding Review

In accordance with plant procedures for ITAAC completion, Southern Nuclear Operating Company (SNC) performed a review of all ITAAC findings pertaining to the subject ITAAC and associated corrective actions. This review found that there are no relevant ITAAC findings associated with this ITAAC. The ITAAC completion review is documented in the ITAAC Completion Package for ITAAC 2.1.02.11b.i Completion Package (Reference 2) and is available for NRC review.

ITAAC Completion Statement

Based on the above information, SNC hereby notifies the NRC that ITAAC 2.1.02.11b.i was performed for VEGP Unit 4 and that the prescribed acceptance criteria were met.

Systems, structures, and components verified as part of this ITAAC are being maintained in their as-designed, ITAAC compliant condition in accordance with approved plant programs and procedures.

References (available for NRC inspection)

1. SV4-RCS-ITR-800048, Rev. 1, “Unit 4 Testing Results of RCS Squib Valve: ITAAC 2.1.02.11b.i, NRC Index Number: 48”
2. 2.1.02.11b.i-U4-CP-Rev0, “ITAAC Completion Package”

Attachment A

*** Excerpt from COL Appendix C Table 2.1.2-1**

*Equipment Name	*Tag No.	*Control PMS/ DAS
Fourth-stage ADS Squib Valve	RCS-PL-V004A	Yes/Yes
Fourth-stage ADS Squib Valve	RCS-PL-V004B	Yes/Yes
Fourth-stage ADS Squib Valve	RCS-PL-V004C	Yes/Yes
Fourth-stage ADS Squib Valve	RCS-PL-V004D	Yes/Yes